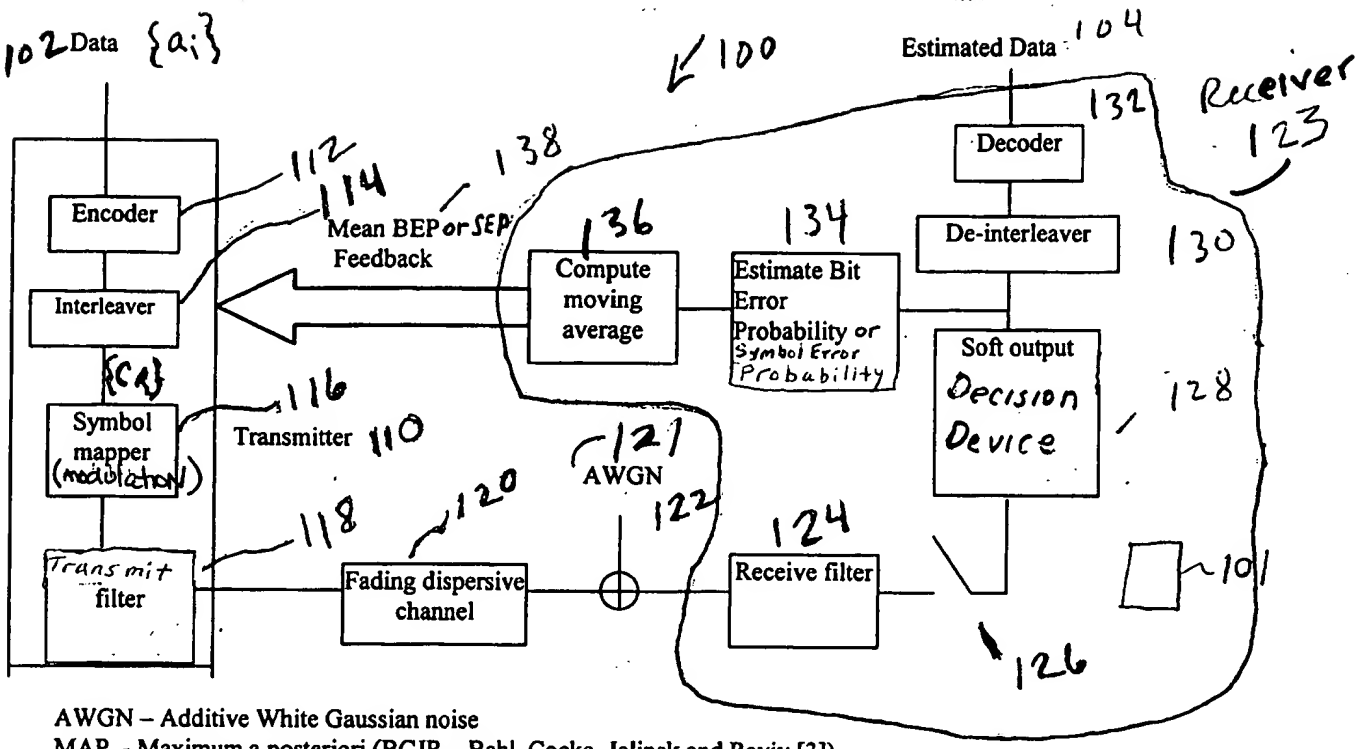

AWGN – Additive White Gaussian noise
MAP - Maximum a posteriori (BCJR – Bahl, Cocke, Jelinek and Raviv [3])
SOVA – Soft Output Viterbi Algorithm

Figure 1: Block Diagram of System

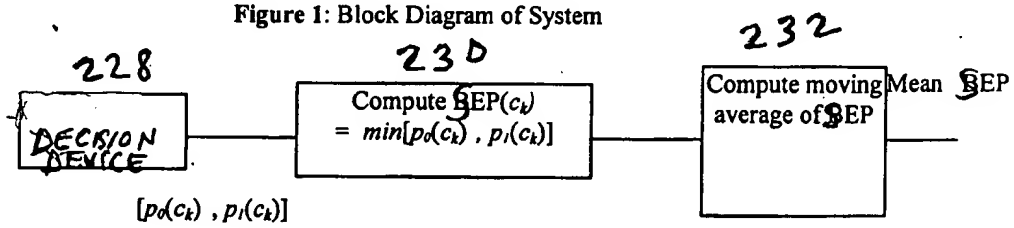

Figure 2 Computation of Mean BEP (Method 1)

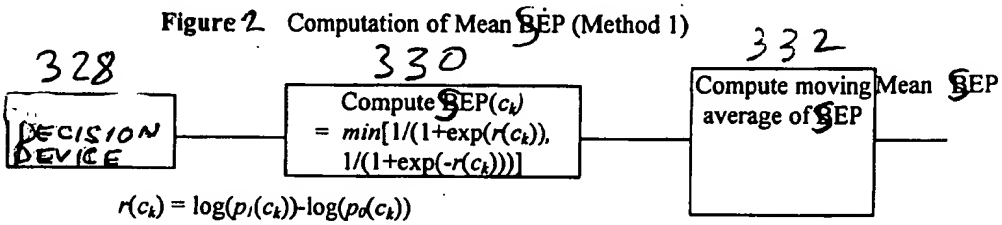

Figure 3 : Computation of Mean BEP (Method 2)

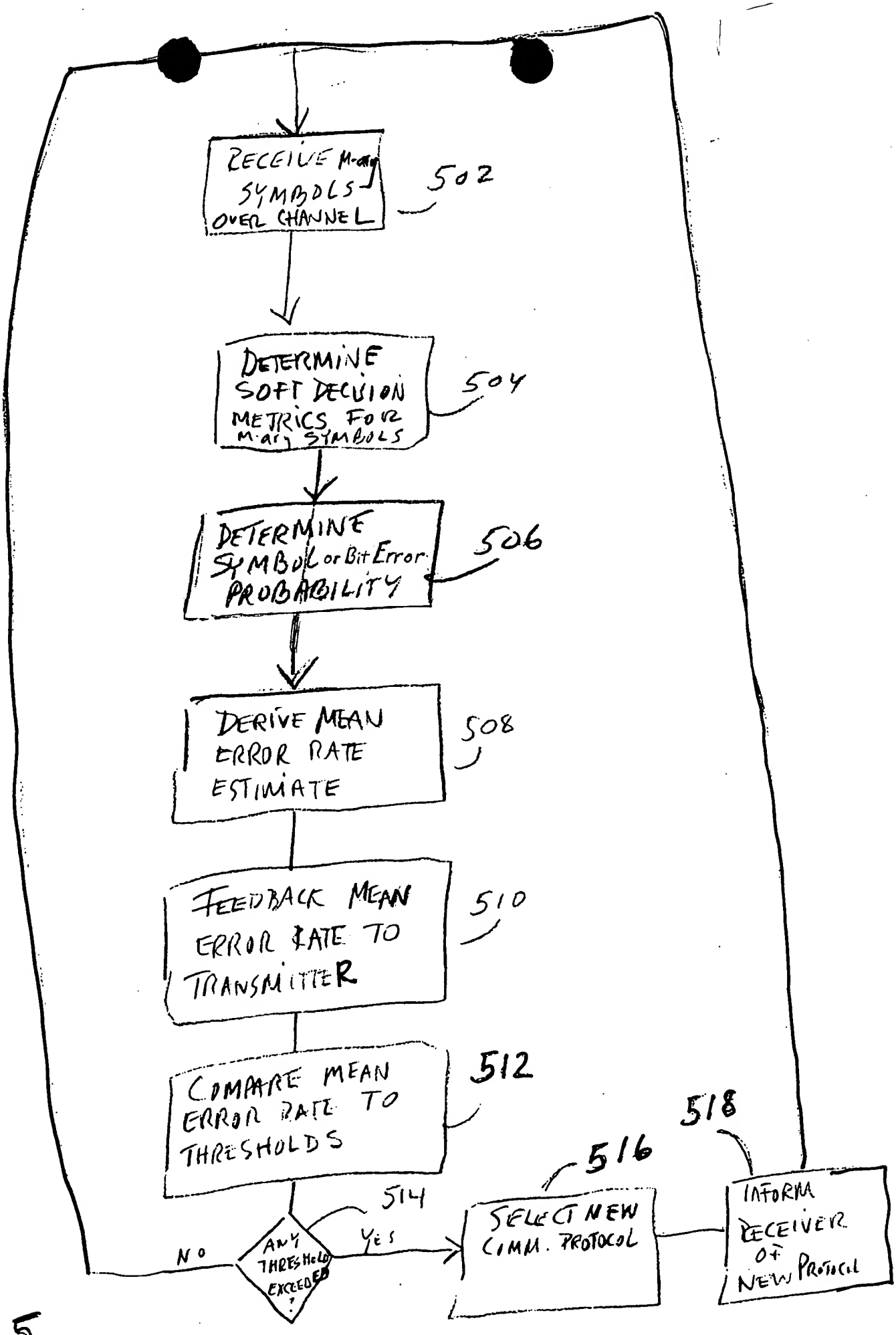
500
RECEIVE M-ary SYMBOLS OVER CHANNEL
502
DETERMINE SOFT DECISION METRICS FOR M-ary SYMBOLS
504
DETERMINE SYMBOL or Bit Error PROBABILITY
506
DERIVE MEAN ERROR RATE ESTIMATE
508
FEEDBACK MEAN ERROR RATE TO TRANSMITTER
510
COMPARE MEAN ERROR RATE TO THRESHOLDS
512
ANY THRESHOLD EXCEEDED ?
514
NO
YES
SELECT NEW COMM. PROTOCOL
516
INFORM RECEIVER OF NEW PROTOCOL
518

Fig 5

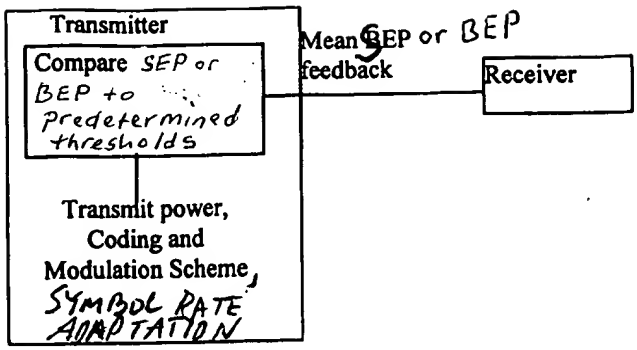

Figure 4: Use of Mean BEP or SEP for Rate Adaptation and Power Control

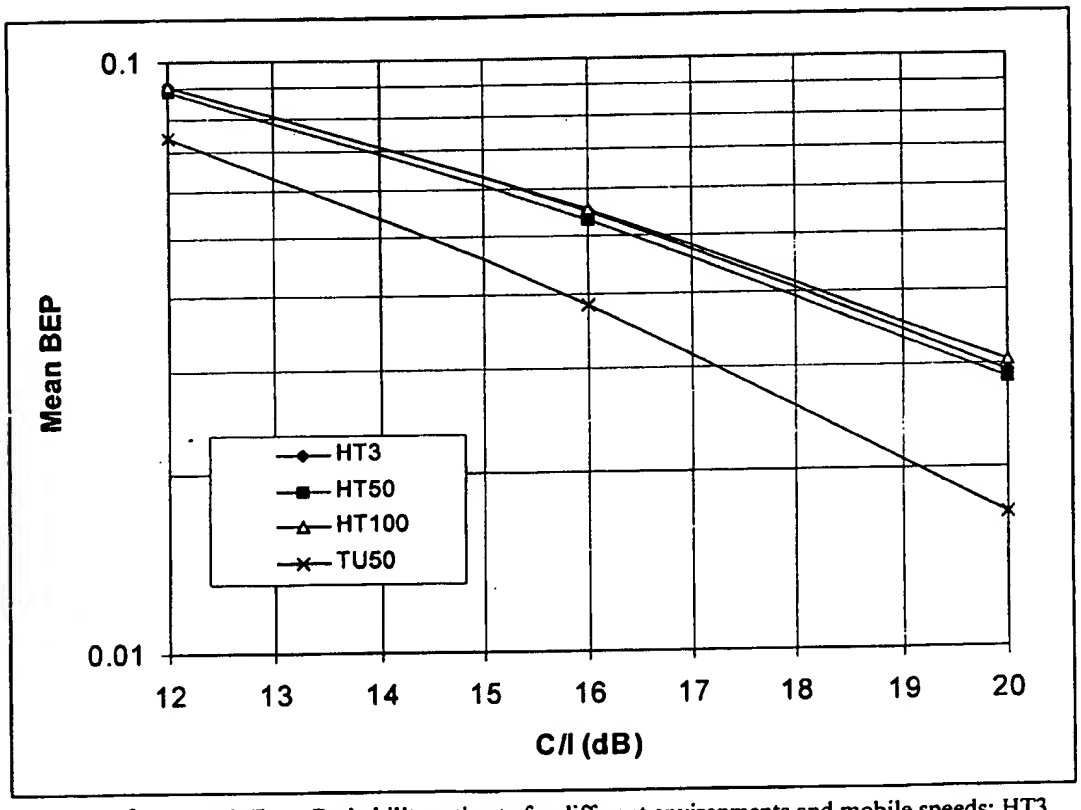

Figure 5: Mean Bit Error Probability estimate for different environments and mobile speeds; HT3 represents the channel model for a mobile speed of 3 km/h in a Hilly Terrain environment.